

## THE MINERAL INDUSTRY OF

# HUNGARY

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Hungary produced modest amounts of fossil fuels and industrial minerals and relied heavily on imported mineral raw materials. In 1998 (the year for which the most recent trade data were available), the value of imports of mineral raw materials, which included petroleum and natural gas, amounted to about \$1.3 billion; the value of exports, in contrast, amounted to \$1.6 million (Hungarian Central Statistical Office, 1999a, p. 107). With respect to metals, bauxite mining and refining to alumina and manganese mining remained the only metal mining and processing operations in Hungary. Cement and coal were the dominant components of the industrial minerals and mineral fuels branches of Hungary's mineral industry. In 1999, Hungary's gross domestic product increased by 4.5% compared with that of 1998, and the volume of industrial production increased by about 6% (Hungarian Statistical Office, 2000). The output of bauxite practically remained at the level of output of 1998; its refining to alumina, which recovered substantially, increased by 114%. The major decline in alumina refining in 1997 was attributable largely to the denationalization of the sector. Cement production also remained at about the output level of 1998. Coal production declined substantially because of the contraction of the lignite branch (see table 1).

### *Metals*

**Bauxite.**—Hungary's total resources of bauxite were estimated to be 26 million metric tons (Mt). Commercial resources were estimated to be about 20 Mt at an average grade of 50.4%  $\text{Al}_2\text{O}_3$  and 7%  $\text{SiO}_2$ . In 1999, Bakonyi Bauxitbánya Kft., which was Hungary's sole bauxite mining facility, produced more than 900,000 metric tons of bauxite at the Fenyőfo I and the Halimba III underground mines and the Obarok and the Bicske open pits. All bauxite was refined at the Ajka alumina refinery.

**Copper.**—Although Hungary no longer mined copper, past surveys of the deep-lying [900- to 1,100-meter] Recsk copper ore body in the Matra mountains discovered between 172 and 175 Mt of copper ore at a grade of 1.12% copper and about 20 Mt of polymetallic ore at a grade of 4.22% lead and 0.92% zinc, as well as smaller quantities of gold, molybdenum, and silver. Geologic investigations conducted by the Government determined the area of mineralization to be about 10 square kilometers. After years of failed efforts to attract foreign investment, the exploration shaft and adit at the Recsk copper deposit, which was under care and maintenance, was finally closed, the equipment was removed, and the facilities were flooded in 1999 (Molnar, 2000).

**Iron and Steel.**—The major issue in Hungary's iron and steel sector centered on the viability of DAM-Diósgyőri Acélművek Rt (Diósgyőr Steelworks Industrial & Trade Shareholding Co.), which was a producer of steel bars and section. DAM, which was owned by VSZ a.s. of Slovakia, faced bankruptcy and liquidation through most of 1999 (Metal Bulletin, 2000). At yearend, however, VSZ promoted a financial stabilization program for DAM partly through a consortium of Hungarian and foreign customers and by raising the efficiency of the steelworks (Marko, 1999).

### *Industrial Minerals*

Industrial minerals, such as construction aggregates and cement, continued to play an important role in Hungary's economy, especially as they contributed in the modernization of the country's infrastructure. The Government could provide funding of about US\$250 million per year for planned highway construction during the period from 1998 to 2008. Other industrial minerals produced during the year included glass sand, kaolin, and perlite.

For more extensive coverage of the mineral industry of Hungary, see the 1996 and 1998 Minerals Yearbooks, volume III, Mineral Industries of Europe and Central Eurasia.

### *Mineral Fuels*

Energy consumption remained one of Hungary's main economic concerns because of the country's need to import a substantial share of its fuel requirements. In terms of value in 1998 (the last year for which complete trade returns are available), imports of natural and manufactured gas exceeded exports by 80 times; coal and coke, by almost 5½ times; and petroleum and petroleum products, by 2½ times (Hungarian Central Statistical Office, 1999b, p. 323). Imports have generally constituted between 55% and 57% of total energy availability (measured in terajoules) from 1996 through 1998 and accounted for more than a 60% share of net consumption in 1998.

Hungary classifies its coals into three categories—hard coal, brown coal, and lignite; hard coal is bituminous, and the brown coal and lignite are subbituminous. Brown coal and lignite were mined largely to fuel the country's thermal electric powerstations. Lignite was mined at the Bukkabrany and Visonta open pit mines; the output from these mines was used entirely at the Matra electric powerplant. The mines and the electric powerplant have been owned by the RWE/EVS consortium of Germany since 1995 (Molnar, 1999).

## References Cited

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TABLE 1  
HUNGARY: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/ METALS	1995	1996	1997	1998	1999
<b>Aluminum:</b>					
Bauxite, gross weight thousand tons	1,015	1,056	743	909	900
Alumina, gross weight, calcined basis do.	184	208	76	138 r/	295
<b>Metal:</b>					
Primary	25,000	30,000	35,000	35,000	30,000
Secondary	4,000 e/	63,808	63,190	64,000	65,000
Total	29,000	93,808	98,190	99,000	95,000
<b>Copper, metal: e/</b>					
Smelter, secondary	100	100	100	100	100
Refined including secondary	11,000	11,000	12,000 4/	12,000	12,000
Gallium, mine output metal content kilograms	4,187	5,000	--	--	--
<b>Iron and steel, metal:</b>					
Pig iron thousand tons	1,515	1,548	1,190	1,258 r/	1,309
Ferroalloys e/ 5/	8,000	8,000	8,000	8,000	8,000
<b>Steel:</b>					
Crude thousand tons	1,865	1,969	1,829	1,940 r/	1,813
Semimanufactures, rolled only do.	2,117	2,133	2,229	2,346	1,954
<b>Manganese ore:</b>					
<b>Run of mine:</b>					
Gross weight	37,000	65,000	57,000	34,000 r/	32,000
Mn content e/	9,600	15,700	14,000	8,900 r/	8,300
<b>Concentrate:</b>					
Gross weight	25,000 e/	33,813	15,291	15,000 e/	15,000
Mn content e/	7,500	11,000	5,000	5,000	5,000
Uranium, U <sub>3</sub> O <sub>8</sub> content	277	250	200	100	--
<b>INDUSTRIAL MINERALS</b>					
Cement, hydraulic thousand tons	2,875	2,747	2,811	2,999	2,978
<b>Clays:</b>					
<b>Bentonite:</b>					
Raw	22,792	15,376	14,848	20,122	16,000
Processed e/	12,000	9,000	9,000	12,000	12,000
Kaolin, raw and washed	10,959	9,854	10,000	10,000 e/	9,000
Gypsum and anhydrite e/	198,000 4/	190,000	150,000 r/	135,000 r/ 4/	130,000
Lime, calcined thousand tons	538	468	498	500 e/	500 e/
Nitrogen, N content of ammonia e/ do.	250	250	250	250	250
Perlite	151,000	110,000	120,000	130,000	148,000
<b>Refractory materials, n.e.s.: e/</b>					
Chamotte products thousand tons	19 4/	20	20	20	20
Chrome magnesite products do.	4 4/	5	5	5	5
<b>Sand and gravel:</b>					
Gravel e/ do.	10,906 4/	11,000	10,000	8,160 r/ 4/	8,500
<b>Sand:</b>					
Common thousand cubic meters	206	275	284	250 e/	250 e/
Foundry	159,000	9,386	72,537	243	175,000
Glass	523,000	324,655	327,569	241,434	490,400
Sodium compounds, hydroxide (caustic soda)	159,215	159,195 r/	160,064 r/	160,000 r/ e/	160,000 e/
<b>Stone:</b>					
Dimension, all types e/ thousand tons	4,967 4/	5,000	5,000	5,000	5,000
Dolomite do.	1,001	582	1,440	1,772 r/	1,700 e/
Limestone do.	4,340	4,949	4,941	4,802 r/	5,000 e/
Sulfur, byproduct, elemental, all sources e/	28,802 4/	28,000	30,000	30,000	30,000
Sulfuric acid	106,737	89,712	84,463	85,000 e/	80,000 e/
Talc e/	1,150 4/	1,200	500 4/	500	500
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
<b>Coal:</b>					
Bituminous thousand tons	844	962	924	877	738
Brown do.	6,458	6,538	6,552	6,008 r/	6,008
Lignite do.	7,151	7,575	8,089	7,610	1,696
Total do.	14,453	15,075	15,565	14,495 r/	8,442
Coke, metallurgical e/	650	650	650	650	650
Fuel briquets thousand tons	362	323	214	250	250 e/
Gas, natural, marketed million cubic meters	5,451	4,756	4,513	4,300	3,100

See footnotes at end of table.

TABLE 1--Continued  
HUNGARY: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1995	1996	1997	1998	1999
<b>MINERAL FUELS AND RELATED MATERIALS--</b>					
Continued:					
Peat, agricultural use e/ thousand tons	48 4/	45 4/	50	50	50
<b>Petroleum:</b>					
Crude:					
As reported do.	1,669	1,477	1,355	1,258	1,243
Converted e/ thousand 42-gallon barrels	10,800 4/	9,800	9,100	8,400	8,400
Refinery products e/ 6/ do.	41,000 4/	40,000	40,000	40,000	40,000

e/ Estimated. r/ Revised. -- Zero.

1/ Table includes data available through November 2000.

2/ Estimated data are rounded to three significant digits; may not add to totals shown.

3/ In addition to the commodities listed, diatomite and a variety of other crude construction materials, such as common clays, are produced, but available information is inadequate to make reliable estimates of output levels.

4/ Reported figure.

5/ Hungary is believed to produce some blast furnace ferromanganese.

6/ Excludes refinery fuel and losses.

TABLE 2  
HUNGARY: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of main facilities	Annual capacity
Alumina	Hungarian Aluminum Industrial Corp. (HUNGALU)	Ajka Timfoldgyar plant, about 120 kilometers southwest of Budapest, near Lake Balaton	400
Do.	do.	Almasfuzito Timfoldgyar plant near the Czech Republic border, 63 kilometers northwest of Budapest	240
Do.	do.	Moson-Magyarovar plant, in northwestern Hungary, about 12 kilometers from Austrian and Czech borders	30
Aluminum, primary	do.	Inota plant, near Varpalota, 75 kilometers southwest of Budapest	46
Bauxite	HUNGALU: Bakony Mining Enterprise	Bakony District, extending roughly 100 kilometers northeast along Lake Balaton	1,500
Cement	Belpatfalvi Cement es Meszipari Rt. Principal investors: Heidelberg & Schwenk (Germany) and Hungarian Group	Belapatfalva, near Miskolc, 125 kilometers northeast of Budapest	1,100
Do.	Beremend Cement es Meszipari Rt. Principal investors: Heidelberg & Schwenk (Germany) (100%)	Beremend, 45 kilometers south of Pecs	1,090
Do.	Dunai Cement es Meszmu Kft. Principal investors: Heidelberg & Schwenk (Germany) (100%)	Vac, 50 kilometers north of Budapest	1,200
Do.	Hejocsabai Cement es Meszipari Rt. Principal investors: Holderbank (Germany) & Hungarian Group	Hejocsaba, 150 kilometers northeast of Budapest	1,450
Do.	Labatlani Cementipari kft. Principal investors: Holderbank (Germany) (100%)	Labatlan, 20 kilometers north of Tatabanya	550
Clays	Agyag-Asvany Kft. Principal investors: Noran Resources PLC (Ireland)	Felsopeteny, one underground and two open pit mines and a 5,000-ton-per-year processing plant. Products include ball clay, kaolin, and refractory clay	35
<b>Coal:</b>			
Bituminous and lignite	Magyar Szenbanyaszati Troszt (MSZT) (Hungarian Coal Mining Trust)	Tatabanya and Oroszlany coal mining region, 45 kilometers west of Budapest	8,900
Do.	do.	Mecsek coal mining region, near Pecs and Komlo, north of the Yugoslav border	3,100
Do.	do.	Borsod coal mining region, 130 kilometers northeast of Budapest	5,200
Lignite	do.	Thorez opencast mine at Visonta, 80 kilometers northeast of Budapest	7,000

TABLE 2--Continued  
HUNGARY: STRUCTURE OF THE MINERAL INDUSTRY IN 1999

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Manganese		Orszagos Erc-es Asvanybanyak (National Ore and Mineral Mines)	Urkut manganese ore mines, 120 kilometers southwest of Budapest	160
Natural gas	million cubic feet	Hungarian Oil and Gas Co. (MOL)	Szeged and Algyo gasfields, southern Hungary	152,000
Do.	do.	do.	Hajduszoboszo gasfields, 180 kilometers east of Budapest	50,000
Do.	do.	do.	Smaller gasfields: Szank, Kardoskut, Bekes, Berefurdo, and others	39,000
Perlite		Perlit 92 Kft. Principal investors: Noran Resources PLC (Ireland) and Hungarian Group	Palhaza, northeastern Hungary; open pit mine and processing plant	150
Petroleum:				
Crude	million barrels	Hungarian Oil and Gas Co. (MOL)	Szeged-Algyo field, near Romanian-Yugoslav border; 50% of total capacity	7
Refined:		Subsidiaries of MOL:		
Do.	do.	Danube Petroleum Refining Co.	Szazhalombatta	55
Do.	do.	Tisza Petroleum Refining Co.	Leninaváros	22
Do.	do.	Zala Petroleum Refining Co.	Zalaegerszeg	4
Silica		Uveg-Asvany Kft.. Principal investors: Noran Resources PLC (Ireland) and Hungarian Group	Mine and plant at Fehevarcsugo	660
Steel		Dunaferr Dunai Vasmu Rt	60 kilometers south of Budapest	1,400
Do.		OAM-Ozdi Acelmuevek Kft	120 kilometers northeast of Budapest	360
Do.		DAM-Diosgyori Acelmuevek es Kereskedelmi Kft	Diosgyoer, 145 kilometers northeast of Budapest	850